

pressure of such widely-contrasted states of weather as continuous strong sunshine and continuous cloud may be investigated.

The direction and force of the wind for each hour of the year is given in full. As regards force, the results show for each month a minimum during the night, or, rather, early morning, and a maximum at noon or shortly thereafter. The extremes of difference occurred in December and June, the maximum being only one-fifth greater than the minimum in December, whereas in June the wind blew with more than double the velocity during the hours about noon than it did from 2 to 4 a.m. It may be remarked here that also in June the sunshine attained to the annual maximum. The relations of the hourly variations of wind direction and force to some of the more decided disturbances of the barometric curves are interesting and striking; and still more striking and important would have been the comparisons of the minute disturbances in the barometric curve with similar disturbances shown by continuous registrations of direction and velocity of wind.

The rest of the report is taken up with observations, either once or thrice a day, of the temperature of the soil at depths, in metres, of 5, 3, 1, 0.15, 0.05, and 0.00; daily observations with maximum and minimum thermometers under a thin covering of earth, exposed on bare soil, and immediately over short grass; daily observations with five maximum and five minimum thermometers at heights, in metres, above the ground, of 0.05, 0.20, 0.40, 0.60, 0.80, and 1.00; observations with the solar radiation thermometer at a height of 102 feet, and on the evaporation,—all indicative of the spirit of activity and research which happily characterises this Observatory.

ON A HYDRIFORM PHASE OF "LIMNOCODIUM SOWERBII"

IT is now four years and a half since Mr. Sowerby first discovered the fresh-water jelly-fish in the tank at Regent's Park, and since that time no definite advance has been made towards clearing up the mystery of their life-history.

Prof. Lankester has continued to make observations and experiments of various kinds, in which I have assisted him, but we have hitherto had no opportunity of examining the tank after the withdrawal of the water. This year, however, Prof. Lankester arranged with Mr. Sowerby that we should be present at that operation. This took place on Thursday last. We collected a large quantity of the sediment and portions of the roots of various plants, and Prof. Lankester kindly placed the whole of this material in my hands for further investigation. I soon discovered upon some of the *Pontederia* roots numerous specimens of a minute organism which proved to be hydroid in nature, and evidently a phase in the life-history of *Limnocoedium*.

Further particulars, including an account of its remarkable structure, and the possible theories as to its connection with the Medusiform person, I reserve till next week, when Prof. Lankester has kindly offered to communicate them for me to the Royal Society.

I may add that Mr. Sowerby has kindly made arrangements at the Botanic Gardens for keeping the *Pontederia* roots in water in the warm tank during the winter, and that, with Mr. Thiselton Dyer's kind permission, I have placed one of the roots in the Royal Gardens at Kew.

ALFRED GIBBS BOURNE

NOTES

THE Lords of the Committee of Council on Education have received information, through Her Majesty's Principal Secretary of State for Foreign Affairs, that Her Majesty's Consul at Antwerp has been appointed British Commissioner for the

International Exhibition which is to be held at Antwerp next year, and that Mr. P. L. Simmonds has been appointed by the Executive Council of the Exhibition at Antwerp their Agent-General for Great Britain and Ireland. The Exhibition in question is a national undertaking under the immediate patronage of His Majesty the King of the Belgians and of the Belgian Government. The President of the Exhibition is H.R.H. the Count of Flanders, and the Vice-President the Minister of Agriculture, Industry, and Commerce. The office of the Agent-General is at 35, Queen Victoria Street, and communications from intending exhibitors should be addressed to him there.

A REMARK was made at the Royal Society dinner on Monday touching the rapidly increasing number of awards of Royal medals not only to Cambridge men, but to men at Cambridge. In connection with it we may refer our readers to an appreciative article in Tuesday's *Times* on Natural Science at that University, in which the immense progress made during the last twenty years is well brought out. The results which may follow from the growth of a Medical School, and of Girtón and Newnham, are indicated. The article concludes with the statement that the new studies, for good or ill, have taken root firmly. "They have already exercised a strong depolarising effect upon the cherished traditions and practices of the older studies. Everything is looked at in a new light, from a scientific point of view; and nothing which cannot stand the scientific test is allowed to pass unchallenged. The outcome of all this can be but dimly foreseen."

At the annual meeting of the Fellows of the Royal Society of Edinburgh, held on Monday, the 24th ult., the following were elected office-bearers for next year:—President: Thomas Stevenson, M.I.C.E.; Vice-Presidents: Rev. W. Lindsay Alexander, D.D., Robert Gray, A. Forbes Irvine of Drum, Edward Sang, LL.D., David Milne Home, John Murray; General Secretary: Prof. Tait; Secretaries to Ordinary Meetings: Prof. Turner, Prof. Crum Brown; Treasurer: Adam Gillies Smith, C.A.; Curator of Library and Museum: Alexander Buchan, M.A.; Councillors: Prof. Cossar Ewart, Prof. James Geikie, Rev. Dr. W. Robertson Smith, Stair Agnew, Prof. Douglas Maclagan, M.D., Hon. Lord Maclaren, Rev. Prof. Flint, D.D., Prof. T. R. Fraser, M.D., Prof. Chiene, J. Y. Buchanan, Prof. Chrystal, Prof. Dickson.

THE University of Edinburgh has just suffered a severe loss by the sudden death of its Principal, Sir Alexander Grant. Many men of science in all parts of the world, who attended the Tercentenary Celebration last April, will remember the prominent and successful part played by the Principal in that remarkable gathering. Full of fresh zeal from this recent triumph of the University, he only a month ago opened the winter session by giving an address to the students, and seemed likely for many years to keep his post and witness a still further increase of that unexampled prosperity which the University has enjoyed under his rule. But this was not to be. He was struck down by an apoplectic attack on Sunday last in his fifty-eighth year.

M. COCHERY, the French Minister of Postal Telegraphy, has ordered the employment of the pneumatic system, which has now been completed in Paris, for the conveyance of ordinary letters to the several railway stations after the closing hours of the different post-offices, the charge being fixed at three deniers for each letter. This is said to be a step preliminary to the carriage of letters, instead of postal cards, by the tubes at an accelerated rate.

WE have received from Messrs. De La Rue and Co. their Diaries—pocket and otherwise—for the ensuing year, and also a charming collection of Christmas cards. The former are as beautifully finished and as full of scientific information and data

as usual. Some of the new series of Christmas and New Year's cards have also a scientific side to them, as they refer to flowers and birds, form and colour being carefully studied, and perhaps even more carefully given than they are in many books of botany and natural history. The series which gives us the story of a fox hunt by monkeys on dogs contains some very masterly drawing.

MR. NEWALL has forwarded to us a sketch of the face of one of several watches which he designed and had made some years ago by Mr. D. Glasgow, of Myddleton Square, President of the Horological Institute. The "hours" are replaced by a large round dot, which is easily seen even on a dark night in the Observatory, and there is no need for figures or a double row of them to count up to 24 o'clock, as has been suggested.

WE have received vol. xx. of the *Transactions* of the Royal Society of Victoria, being a record of the work of the Society for last year. The longest paper in the number is one by Mr. Howitt, on the rocks of Noyang; two communications by Messrs. Blunt and Jamieson deal with the influence of light on bacteria, while Mr. Ralph discusses the occurrence of bacteria (bacilli) in living plants. In a paper on modern fireproof and watertight building materials, Mr. Behrendt refers specially to Trägerwellblech ("bearing corrugated iron plates") and asphalte. Mr. Ellery, the President of the Society, communicates notes on the recent red sunsets, which he attributes to the prevalence of vapour in the higher regions of the atmosphere; on the rainfall map recently issued by the Government of Victoria; and on the early history of telegraphy, the invention of which he attributes to Mr. Edward Davy, at one time of the Assay Office in Melbourne. Mr. MacGillivray gives the fifth and sixth instalments of his lists and descriptions of new or little-known Polyzoa. The remaining papers printed in the volume (although many more were read before the Society) are:—On the caves perforating marble deposits, Limestone Creek, by Mr. Stirling; incandescent lamp for surgical and microscopical purposes, by Mr. Joseph; electric lighting for mines, by the same author; notes on the dressing of tin ore, by Mr. Newberry; and notes on hydrology, by Mr. Steane.

A PROJECT which, if executed, would render the Paris Exhibition of 1889 for ever memorable, has been published by M. Eiffel, the French engineer, and is described in *La Nature*. It is to erect in the grounds of the Exhibition an iron tower 300 metres in height, that is, twice as high as the Great Pyramid, and more than twice the height of the Strasburg Cathedral; 160 metres he considers as the limit of height possible in a structure of which stone is the principal material, and hence iron is proposed. The base of the tower is of pyramidal shape, and is to be 70 metres high, and the superficial area at this height will be 5000 square metres; above this there are to be three other stages, or stories, in which will be rooms which it is proposed to use for various purposes, scientific and other. The towers of Notre Dame will be mere pygmies beside this colossal structure, and will not reach to its first floor. The projector points out that, in addition to its monumental character, the structure will be useful for strategical purposes in war time, on account of the vast range of view, for meteorological and astronomical observations, for at such a height the clearness of the air and the absence of fogs would render observations possible which cannot be made on the ground. The tower might also be used for the electric light. The whole exhibition and the surrounding neighbourhood might thus be lighted from a central point. Many scientific problems may, it is suggested, be investigated from the tower, such as the resistance of the air to different weights, certain laws of elasticity, the study of the compression of gas or vapours, of the oscillation of the pendulum. In shape it is to resemble an enormous lighthouse, gradually tapering from a wide base to the summit.

WE learn from *Science* that the Norwegian bark *Lovcid*, recently arrived in Philadelphia, reports a very peculiar squall experienced October 18, in lat. 39° 49' N., long. 69° 5' W. During fine, clear weather, with a light breeze from the northwest, heavy banks of clouds of most threatening aspect suddenly appeared, driving in every direction. Almost immediately a heavy squall of wind and rain struck the vessel, the wind shifting quickly all around the compass. In the midst of this disturbance, which lasted about an hour, a single peal of thunder was heard, and simultaneously a bolt of lightning struck the fore-royal mast-head, and ran down the mast to the royal yard, which was almost destroyed. The lightning, which looked like a ball of fire, then ran out on the horn of the cross-trees, and "burst" with a loud report, scattering sparks all over the vessel. The barometer fell suddenly from 30 to 28.60, and then rose as rapidly, the weather becoming pleasant immediately afterwards. This is rather a peculiar squall, considering the locality and the season.

THE New York *Financial and Mining News* contains an account of the extraordinary effect of an explosion of a large quantity of nitro-glycerine in what appeared to be an extinct oil-well in the Pennsylvanian oil-fields. A careful examination of the soil in the shaft failed to reveal any trace of oil or gas, and at length, as a last resource, it was decided to try the effect of an explosion of a shell containing fifty quarts of this explosive. First a column of water rose eight or ten feet and then fell back; a few moments later the burnt glycerine, mud, and sand rushed up the derrick in a black stream, the blackness gradually changing to yellow. Then, with a roar, the gas burst forth in a cloud which for a moment hid the derrick from sight, and as it cleared away revealed a solid golden column half a foot in diameter shooting from the derrick floor eighty feet through the air, till it broke into fragments on the crown pulley and fell in showers of golden rain for many yards around. This column of oil continued for an hour rushing in a torrent into the air. The branches of the trees around were like huge yellow plumes, and a large stream ran down the hill to a road, where it nearly filled the space beneath a small bridge. In two hours the neighbouring flats were covered with a flood of oil, and the hillside looked as if a freshet had passed over it, while heavy clouds of gas hung low over the woods. Dams were built across the stream in order that the production might be calculated, but they were borne away almost as soon as erected. The people living near the flats fled to the hills; fires had to be extinguished in the district to prevent a conflagration. The outflow was estimated at 8000 barrels in twenty-four hours. Ultimately the stream was diverted into the banks, after much labour and some danger. It was noticed that all the wells in the neighbourhood declined as soon as the outflow here mentioned commenced, the gauges in some of them showing at the end of three days a fall to half their previous depth.

M. JAMIN, Perpetual Secretary of the Paris Academy of Sciences, has been elected a member of the Société française de Navigation aérienne. He will take his seat next Thursday, the 11th inst., and is to deliver a speech on the occasion. He is at present engaged in writing an exhaustive article on aerial direction, which will very shortly appear in the *Revue des deux Mondes*.

ON Saturday night Mr. H. M. Stanley, on leaving Berlin after attending the West African Conference, was entertained at a banquet by the Central Society for Commercial Geography. A peculiar feature of the banquet was an ethnological study in the shape of a group of mummies representing some races of Africa, presumably those of the Cameroon and Angra Pequena regions.

AN earthquake was felt on Sunday and Monday, November 23 and 24, near Briançon, in the valley of Queyras on the banks

of the Guil, a torrent discharging into the Durance, in the Department of the Hautes Alpes. Three days afterwards, on Thursday the 27th, a severe shock was felt at Grenoble, about 100 km. west-south-west from the Queyras valley. It lasted thirty seconds, passing in a direction from west to east. All the houses were shaken, but no injury is reported beyond the fright sustained by the inhabitants. The same night, almost at the same hour, six shocks were felt at Lyons, moving in the same direction; and commotions of a similar kind are announced from Turin and the sea-coast of Provence, at Cannes and Nice in particular.

WE regret to hear that M. Duprez de Lonce, the celebrated naval engineer and Member of the French Academy of Sciences, is dangerously ill, and that his life is almost despaired of.

WE regret to announce the death, at Paris, at the age of seventy-four, of M. Quet, a distinguished French mathematician, well known for his works in connection with capillarity, electricity, &c., most of which have appeared in the *Comptes Rendus* of the Paris Academy of Sciences.

M. W. DE FONVIELLE has published a pamphlet on "L'Aérostat dirigeable de Meudon," in which he endeavours to show that the reports current in the French Academy respecting the experiments in question are exaggerated, though at the same time he seeks to do justice to his distinguished countryman, who has twice succeeded in proving that by means of electricity the power of resistance may be imparted to balloons. He concludes by recommending that, the electric fluids having done their part, *la parole est à le vapeur*.

INTERESTING researches with so-called Paradise fish (*Macropodus venustus*) were made at the Berlin Aquarium recently. The fish is a native of China, its body, only a few centimetres long, is of the brightest hues, and its bluish-green fins are so enormously large that the fish seems almost to succumb under their weight. It is easily kept, and breeds frequently in captivity; the temperature of the water it is kept in must, however, not be allowed to sink below 20° C.

ONE result of the recent expedition sent from Quetta under Sir Oriel Tanner to punish the inhabitants of the Zhob Valley is stated in a telegram from Calcutta to be a complete survey of the whole of that valley. It has been ascertained that the best road from the Gomul Pass to Candahar does not lie, as had been supposed, through the Zhob Valley, but through the valley of the Khwandar, and that the route is practicable for a large army.

DR. OTTO FINSCH left Sydney on September 10 by the steamer *Samoa*, en route for the Phoenix and Union Islands, where he intends staying for some time and making extensive ethnographical collections.

THE *Boletín* of the National Academy of Sciences in Cordova, Argentine Republic (Buenos Ayres, 1884), has a very long paper by Señor Ameghino on his geological and palæontological investigations in the province of Buenos Ayres. The only other paper is by Herr Doering, and deals with the sinking of artesian wells in the Argentine Republic.

THE Rev. Henry H. Higgins publishes in a separate form a paper on "Museums of Natural History," read before the Literary and Philosophical Society of Liverpool. After an experience of over a quarter of a century, during which he passed several times every week through museum rooms, the author calculates that out of a thousand visitors to the Liverpool Museum, ten to twenty were students, 780 interested observers, and 200 loungers.

MR. CHARLES C. SHERRINGTON, B.A. of Caius College, Cambridge, has been elected to the vacant George Henry Lewes Studentship.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus* ♀) from India, presented by Mr. W. J. Bennett; a Rhesus Monkey (*Macacus rhesus*) from India, presented by Mr. Samuel Levi; an Ocelot (*Felis pardalis*) from America, presented by Mr. H. B. Whitmarsh; two King Parrakeets (*Aprosmictus scapularis*) from New South Wales, presented by Mr. E. Meek; a Cheer Pheasant (*Phasianus wallichii* ♀) from North India, presented by Mr. E. Buck; a Pig-tailed Monkey (*Macacus nemestrinus* ♂) from Java, deposited; a Rufous-necked Weaver Bird (*Hyphantornis texor*) from West Africa, received in exchange; four Long-fronted Gerbilles (*Gerbillus longifrons*), born in the Gardens.

THE ROYAL SOCIETY ANNIVERSARY

THIS meeting took place on Monday last, the time-honoured date—St. Andrew's Day—falling on Sunday. In the regretted absence of the President, Prof. Huxley, who, the Fellows were rejoiced to learn, is rapidly recovering his health from his sojourn in Italy, the Treasurer, Mr. John Evans, occupied the chair and read the following address:—

The absence of our President from his post to-day must of necessity cast a certain amount of gloom over the proceedings at this our anniversary meeting, and, personally, I feel additional regret that it devolves upon me, as your Senior Vice-President and Treasurer, to be the unworthy occupant of the chair on the present occasion. My regret at the absence of the President is, however, in one respect tempered by a strong hope, in which I am sure that you will all fervently join, that the timely retirement from arduous work which has been enforced upon him by his medical advisers may produce those beneficial results which we all so cordially desire, and that we may ere long again see among us our accomplished and valued President in renewed health and strength.

I must, however, turn from the expression of our hopes for the future, to that of our regrets for the past, and for a short time dwell upon the mournful list of vacancies which the ever-active hand of death has caused in our ranks during the past twelve months. In one respect only can a topic of consolation be found in this list. It is that in extent it is less than that of last year, the total number of our deceased Fellows being only eighteen on the home list and two on the foreign list, while those numbers were twenty-one and two respectively at our last anniversary.

Both the foreign members whose loss we have on the present occasion to deplore were men of the highest distinction in chemical science. Both were residents at Paris, and both had Chairs in the French Academy, of which one had been since 1868 one of the permanent secretaries. I cannot dwell upon the discoveries and the remarkable career of M. Jean Baptiste André Dumas, whose energy and perspicuity, even when past the limit of fourscore years, all those who of late have had the opportunity of being present at a meeting of the French Academy must have found reason to admire. An appreciative memoir of him by one of our own Fellows, who of all men living is perhaps the best qualified to judge of the value of his labours—Prof. Hofman—written while Dumas was still among us, will be found in the pages of our own *Proceedings* (vol. xxxviii. x.), and those of NATURE (vol. xxi. February 6, 1880). It will give some slight idea of the extent of time over which the labours of M. Dumas have extended if I mention that, so long ago as in 1843, he received the Copley Medal at our hands, at a time when his chemical and physiological researches had already extended over a period of twenty-two years. M. Dumas died at Cannes on April 11 last, and among the most touching of the speeches at his obsequies was that of M. Wurtz, whose own decease took place on the 12th of the following month.

Although nearly twenty years younger than M. Dumas, M. Karl Adolph Wurtz had for a long time been one of the most distinguished leaders of modern chemical science, especially in the department of organic chemistry, and his merits were recognised by this Society in 1864, when he was elected one of our foreign members, and again in 1881, when the Copley Medal was awarded to him.

Among our English Fellows was a contemporary of Wurtz, who, like him, had been a pupil of the illustrious Liebig, but whose bent was more on the practical than on the theoretical